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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/367,081	01/24/2000	JEAN-FRANCOIS PENNEAU	15675.P291	3851

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EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/367,081	PENNEAU ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- Th MAILING DATE of this communication appears on the cov r sheet with th correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,30,33-44,46,48,49 and 111-115 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,30,33-44,46,48,49 and 111-115 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

1. Claims 35-44 are objected to because of the following informalities: the claims should begin with an article such as "A" or "The". Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-9, 30, 33-44, 46, 48, 49 and 111-115 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/20504 in view of Kanbara et al (US 5,538,811). US 5,811,205 to Andrieu is an equivalent form of WO 96/20504 and will be relied on as a translation of WO 96/20505. Andrieu teaches a bifunctional electrode comprising an electronically conducting porous first layer made of 80% by weight of active charcoal and 20% of PVDF polymer binder (example 4). Andrieu is silent as to a specific surface area of the active charcoal and its pore diameter. Kanbara reference is directed to an electric double layer capacitor comprising an activated charcoal having a specific surface area of 2500 m<sup>2</sup>/g and an average diameter of micropores of 20 angstroms (column 14, lines 60-65) falling within the claimed ranges. Kanbara also teaches the specific surface area, the micropore size of the activated charcoal and the weight ratio of the activated charcoal to the base polymer together to determine the performance of the capacitors (column 19, line 50 et seq. and table 7). In an absence of unexpected results, it would have been

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obvious to one having ordinary skill in the art at the time the invention was made to employ the activated charcoal having the specific surface area and the pore size within the range instantly claimed, motivated by Kanbara and expectation of successfully practicing the invention of Andrieu. Such specific surface area and micropore size are also taught by Kanbara to provide the desired electrical capacity which is important to the invention of Andrieu thus further suggesting the modification.

Since the first layer of the bifunctional electrode of Andrieu as modified by Kanbara meets all the recited structure of the claims, it is the examiner's position that a BET specific surface would be inherently present in the first layer of the bifunctional electrode.

With regard to claims 4, 5, 33, 34, and 36, it is well-known in the art that polyvinylidene fluoride is ethylene-alpha-olefin copolymer (column 3, lines 8-9, US 5,738,111).

With regard to claims 6, 7, 35, 37, 38, 40, 112 and 113, Kanbara teaches the base polymer used in the electrode layer 11 including activated carbon and polyether (column 14, lines 41-43, column 4, lines 35-40). The weight ratio of the activated carbon and the polymer base shown in table 7. Kanbara also teaches the specific surface area, the micropore size of the activated charcoal and the weight ratio of the activated charcoal to the base polymer together to optimize the performance of the capacitors (column 19, line 50 et seq. and table 7). In an absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to employ the first layer of the electrode having the composition instantly claimed motivated by the desire to obtain the electrode having a higher charge capacity.

With regard to claims 48 and 49, since the first layer of the bifunctional electrode of Andrieu as modified by Kanbara meets all the recited structure of the claims (a porous film comprising 80% activated charcoal that has a specific surface area and micropore size within the claim ranges), it is the examiner's position that a tensile strength would be inherently present in the first layer of the bifunctional electrode.

With regard to claims 39 and 114, since Kanbara is using the same polyvinyl alcohol as Applicant to form the electrode layer (formula VI), it is the examiner's position that the molecular mass would be inherently present within the range set out in the claims.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1, 4-9, 30, 33-44, 46, 48, 49 and 111-115 have been considered but are moot in view of the new ground(s) of rejection.
5. The art rejections in Paper no. 10 have been overcome by the present amendment and response.
6. The objections to claims 35-44 have been maintained because Applicants failed to respond or amend claims in a manner as suggested by the examiner.

#### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426.

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The examiner can normally be reached on Tue-Fri, 8:30-6:00 and on alternating Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV  
April 4, 2003



TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700